ATC: P.O. BOX 47 ■ WAUKESHA, WI 53187-0047
PHONE: TOLL FREE: 866-899-3204 ■ FAX: 262-506-6124 ■ www.atcllc.com

XCEL ENERGY: 1414 W. HAMILTON AVE ■ P.O. BOX 8 ■ EAU CLAIRE, WI 54702
PHONE: TOLL FREE 800.855.8999 ■ www.xcelenergy.com

July 18, 2014

Electronic Submittal

Mr. James Lepinski
Docket Coordinator
Public Service Commission of Wisconsin
610 North Whitney Way, P.O. Box 7854
Madison, WI 53707-7854

Mr. David Siebert
Director, Office of Energy
Wisconsin Department of Natural Resources
101 S. Webster Street, P.O. Box 7921
Madison, WI 53707-7921

Joint Application for PSCW Certificate of Public Convenience and Necessity and WDNR Utility Permit Badger Coulee 345 kV Transmission Line Project
PSCW Docket No. 5-CE-142

Part 3 of the Applicants' Responses to PSCW Staff's Fifth Set of Data Requests

Dear Mssrs. Lepinski and Siebert:

Attached please find Part 3 of the Applicants', American Transmission Company LLC by its corporate manager ATC Management Inc. (collectively ATC) and Northern States Power Company (NSPW), responses to your fifth set of data requests dated June 17, 2014 in the above referenced docket. Part 2 contains responses to 5.04, 5.06, 5.07, 5.13, 5.14, and 5.24. Any attachments to the responses have at the beginning of their name the item number that it corresponds with and then are consecutively numbered. All acronyms and abbreviations used in these responses correspond with the list on pages ix and x of the Joint Application.

Please contact us if you have any questions.

Sincerely,

Tom Malanowski
Consultant Regulatory Project Manager

ATC Management Inc.
W234 N2000 Ridgeview Parkway Court, Waukesha, WI 53188
Phone: 262-506-6948
tmalanowski@atcllc.com

Kyle S. Neidermire
Xcel Energy
Manager, Regional Transmission Initiatives
1414 West Hamilton Ave. STE 3, Eau Claire, WI 54701
Phone: 715.737.2367
kyle.s.neidermire@xcelenergy.com

Badger Coulee 345 kV Transmission Line Project
Docket No. 5-CE-142

PSCW Fifth Set of Request Items
Request No. 05.04 Response

REQUEST NO. 05.04:

(Revised Appendix D, Exhibit 1, p. 153 of 346.) Explain the reasons for selecting the "35-45 percent wind output model" for the FCITC analysis.

RESPONSE TO REQUEST NO. 05.04:

While the reason for selecting the off-peak with the "35-45 percent wind output model" for the FCITC analysis was not clearly documented in the WWTRS report, of the three available models, the off-peak models are generally considered the better representation of scenarios in which wind generation output would be higher. Since much of the projected wind development is modeled in western MISO, a higher dispatch of these units would be expected to correlate to a period of importing power to Wisconsin. So either off-peak model would generally be acceptable for the FCITC analysis as a metric to compare project alternatives.

Dated this 18th day of July, 2014.

Badger Coulee 345 kV Transmission Line Project
Docket No. 5-CE-142

PSCW Fifth Set of Request Items
Request No. 05.06 Response

REQUEST NO. 05.06:

(Response to item 01.134.) Provide an updated response indicating how CO2 emissions would change across not just the ATC footprint but MISO as well.

RESPONSE TO REQUEST NO. 05.06:

The following tables detail the CO_2 emissions, in tons, as taken from the 2020 and 2026 PROMOD futures for the ATC and MISO footprints both with Badger Coulee and without Badger Coulee ("Base"). The difference column ("% Change") shows the change in CO_2 emissions when Badger Coulee is added to the model.

	2020 CO_2 Emissions (Tons)					
	ATC Footprint			MISO Footprint		
Future	Base	Badger Coulee	% Change	Base	Badger Coulee	% Change
Robust Economy	55,629,867	55,354,954	-0.5%	611,243,872	611,291,642	0.0%
Green Economy	49,900,305	49,787,131	-0.2%	551,106,072	551,093,620	0.0%
Slow Growth	45,756,507	45,404,809	-0.8%	473,550,999	473,563,243	0.0%
Regional Wind	44,119,826	44,145,130	0.1%	546,468,922	546,507,016	0.0%
Limited Investment	49,951,503	49,785,570	-0.3%	526,865,319	526,929,955	0.0%
Carbon Constrained	42,308,275	42,131,058	-0.4%	484,307,431	484,555,106	0.1%

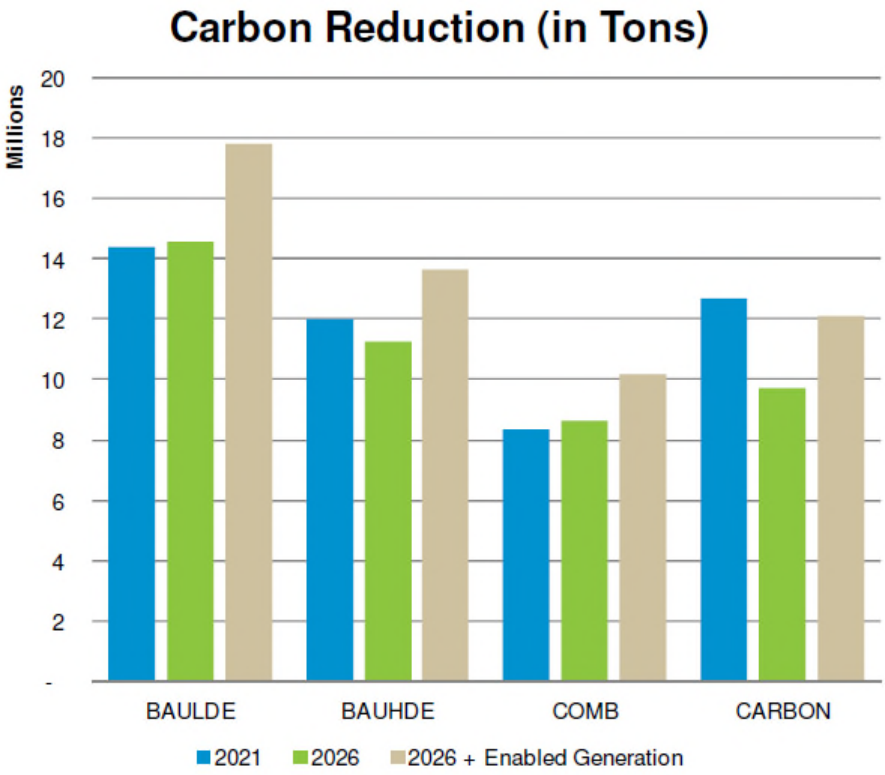
	2026 CO_2 Emissions (Tons)					
	ATC Footprint			MISO Footprint		
Future	Base	Badger Coulee	% Change	Base	Badger Coulee	% Change
Robust Economy	69,657,984	69,314,679	-0.5%	678,971,158	679,062,431	0.0%
Green Economy	61,641,742	61,385,886	-0.4%	590,796,421	590,817,405	0.0%
Slow Growth	52,149,214	51,906,829	-0.5%	486,624,737	486,686,208	0.0%

Regional Wind	55,158,486	54,976,227	-0.3%	588,663,462	588,656,408	0.0%
Limited Investment	57,961,994	57,804,403	-0.3%	550,404,253	550,496,165	0.0%
Carbon Constrained	41,731,711	41,496,927	-0.6%	385,035,320	385,310,866	0.1%

The addition of Badger Coulee decreases the CO_2 emissions for the ATC footprint in five of the six futures for 2020 and in all six of the futures for 2026. The reason for this decrease is that the Badger Coulee project would increase imports (including wind generation) into ATC, which would subsequently displace fossil generation within the ATC footprint. The CO_2 impact of the Badger Coulee project on the MISO footprint is generally smaller in all futures, but shows a slight increase in emissions. This is because, as the Badger Coulee project increases imports into the ATC system, other fossil generation needs to be dispatched outside the ATC footprint to serve local needs across the system.

Although the Badger Coulee project alone might slightly increase emissions in MISO, it is important to note that the Badger Coulee project is just one part of the full MISO Multi Value Project ("MVP") portfolio. And the portfolio as a whole provides significant carbon reductions to the full MISO footprint. The following figure from MISO's Multi Value Project Analysis Report details the "Carbon Reduction (in Tons)" as a result of the full MVP portfolio.[1] As a part of this portfolio, Badger Coulee helps to provide this reduction to carbon emissions when combined with the remainder of the portfolio.

[1] "Carbon Reduction (in Tons)" taken from Section 9.6, Figure 9.8: Carbon Reduction by scenario as found in the Multi Value Project Portfolio Results and Analysis report dated January 10, 2012; available at: https://www.misoenergy.org/Library/Repository/Study/Candidate%20MVP%20Analysis/MVP%20Portfolio%20Analysis%20Full%20Report.pdf.



Dated this 18th day of July, 2014.

Badger Coulee 345 kV Transmission Line Project
Docket No. 5-CE-142

PSCW Fifth Set of Request Items
Request No. 05.07 Response

REQUEST NO. 05.07:

(Response to items 02.35 and 02.36.) Provide separate tables for ATC and NSPW similar to Table 53 with the present value worksheet of annual revenue requirements and benefits for ATC and NSPW. Also provide separate tables similar to Table G1 for ATC and NSPW.

RESPONSE TO REQUEST NO. 05.07:

After discussions between the PSCW staff and the Applicants, the PSCW staff agreed to withdraw this request because similar information was requested in Data Request Nos. 02.35 and 02.36.

Dated this 18th day of July, 2014.

Badger Coulee 345 kV Transmission Line Project
Docket No. 5-CE-142

PSCW Fifth Set of Request Items
Request No. 05.13 Response

REQUEST NO. 05.13:

Provide an additional reliability analysis, including models and corresponding MS Excel tables, using MTEP 13 data for the Cardinal-Bluffs project without Badger-Coulee and for the combination of Badger-Coulee and Cardinal-Bluffs project (peak and off peak). Also include power flow modeling one-line diagrams for the study region for all of the scenarios (base case, Badger Coulee, Cardinal Bluffs, and the Combination).

RESPONSE TO REQUEST NO. 05.13:

Pursuant to discussions between PSCW staff and the Applicants, the PSCW staff has agreed to give the Applicants additional time to complete this analysis. The Applicants anticipate that this analysis will be completed in late September 2014. In the meantime, the Applicants will work with the PSCW staff to determine whether the Applicants need to provide the requested one-line diagrams.

Dated this 18th day of July, 2014.

Badger Coulee 345 kV Transmission Line Project
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PSCW Fifth Set of Request Items
Request No. 05.14 Response

REQUEST NO. 05.14:

The capital cost for wind generation has trended down from year to year. The application assumes that capital costs for wind energy will trend upward in the future at 3 percent per year. Recalculate the Renewable Investment Benefit (RIB) using a flat capital cost projection from the current U.S. Energy Information Administration (EIA) numbers for wind generation capital costs.

RESPONSE TO REQUEST NO. 05.14:

Pursuant to discussions between PSCW staff and the Applicants, the PSCW staff has agreed to give the Applicants additional time to respond to this request. To respond, the Applicants have agreed to recalculate the RIB as requested in Data Request 02.34 and to use a zero percent increase per year for wind capital costs. The Applicants anticipate that this analysis will be completed in late September 2014.

Dated this 18th day of July, 2014.

Badger Coulee 345 kV Transmission Line Project
Docket No. 5-CE-142

PSCW Fifth Set of Request Items
Request No. 05.24 Response

REQUEST NO. 05.24:

Describe the measures that would be taken to avoid ground currents where structure foundations would extend into the water table in close proximity to dairy barns.

RESPONSE TO REQUEST NO. 05.24:

During the routing and sighting process, the Applicants receive information from the local distribution companies identifying dairy farms they know of that are in the proposed project area. Once a route is chosen and before construction begins, Neutral-to-Earth-Voltage (NEV) testing is offered to all identified dairy farms that are within ½ mile and fed from collocated distribution. Collocated distribution is defined as distribution that is less than 150' from the proposed transmission line and parallel for more than 1,000 feet. This testing will measure the amount of cow contact voltage that exists on the farm before construction of the transmission line. Once the project is constructed, the NEV testing will be performed again to verify that any NEV levels present on the farm are still below allowable limits set by the PSCW. Farms with confined animals in the project area that were not initially identified or which were not offered testing can request that their facilities be tested.

Dated this 18th day of July, 2014.